IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants: Mark Stephen Amshoff

Examiner: Russell, Wanda Z.

Serial No: 10/075,500

Group Art Unit: 2616

Filed: February 14, 2002

Docket: PU010080

For: METHOD AND APPARATUS FOR ENHANCED CABLE MODEM OPERATION

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Hon. Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

Applicants appeal the status of Claims 1-19 as rejected in the non-final Office Action dated October 16, 2007, the non-final Office Action dated February 8, 2008, and the final Office Action dated June 23, 2008, pursuant to the Notice of Appeal filed concurrently herewith and submit this appeal brief.

TABLE OF CONTENTS:

1. Real Party in Interest

The real party in interest is THOMSON LICENSING S.A., the assignee of the entire right title and interest in and to the subject application by virtue of an assignment recorded with the Patent Office on 02/14/2002 at reel/frame 012617/0456.

2. Related Appeals and Interferences

None

3. Status of Claims

Claims 1-19 are pending. Claims 1-19 stand rejected and are under appeal.

A copy of the Claims 1-19 is presented in Section 8 below.

4. Status of Amendments

An Amendment under 37 CFR §1.111, filed with the PTO on December 7, 2007 in response to a non-final Office Action dated October 16, 2007, was entered. An Amendment under 37 CFR §1.111, filed with the PTO on April 16, 2008 in response to a non-final Office Action dated February 5, 2008, was entered. No Responses/Amendments were filed subsequent to the above Amendment filed on April 16, 2008. A final Office Action dated June 23, 2008, to which this Appeal Brief is directed, is currently pending.

5. Summary of Claimed Subject Matter

Independent Claim 1 is directed to "[i]n a transmission system comprising a plurality of

transmission channels wherein at least one of said plurality of channels carries a data signal thereover, a channel search method for finding a data channel available for use by a terminal located at a downstream end of said plurality of transmission channels" (Claim 1, preamble).

The subject matter of the first element (beginning with "sequentially scanning") recited in Claim 1 is described, e.g., at: page 8, lines 22-31. Moreover, the subject matter of the first element of Claim 1 involves, e.g.: elements 303, 308, 311, and 314 of FIG. 3.

The subject matter of the second element (beginning with "if the data channel") recited in Claim 1 is described, e.g., at: page 8, lines 22-31. Moreover, the subject matter of the second element of Claim 1 involves, e.g.: elements 303-319 of FIG. 3.

Independent Claim 8 is directed to "[a] bi-directional communication device, operative to receive a data signal transmitted over at least one transmission channel selected from a plurality of transmission channels" (Claim 8, preamble).

The subject matter of the first element (beginning with "receiving and channel-search means operative") recited in Claim 8 is described, e.g., at: page 4, line 30 to page 5, line 3. Moreover, the subject matter of the first element of Claim 8 involves, e.g.: element 105 of FIG. 1.

The subject matter of the second element (beginning with "the receiving and channel-search means being further operative") recited in Claim 8 is described, e.g., at: page 8, lines 22-31; and page 9, lines 12-16. Moreover, the subject matter of the second element of Claim 8 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 9 is directed to a "bi-directional communication device" (Claim 9, preamble).

The subject matter of the first element (beginning with "wherein the receiving and channel-search means") recited in Claim 9 is described, e.g., at: page 9, lines 2-3. Moreover, the subject matter of the first element of Claim 9 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 10 is directed to a "bi-directional communication device" (Claim 10, preamble).

The subject matter of the first element (beginning with "wherein the receiving and channel-search means") recited in Claim 10 is described, e.g., at: page 8, line 9. Moreover, the subject matter of the first element of Claim 10 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 11 is directed to a "bi-directional communication device" (Claim 11, preamble).

The subject matter of the first element (beginning with "wherein the predetermined modulation protocol") recited in Claim 11 is described, e.g., at: page 9, lines 12-16. Moreover, the subject matter of the first element of Claim 11 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 12 is directed to a "bi-directional communication device" (Claim 12, preamble).

The subject matter of the first element (beginning with "wherein the predetermined modulation protocol") recited in Claim 12 is described, e.g., at: page 10, lines 2-4. Moreover, the subject matter of the first element of Claim 12 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 13 is directed to a "bi-directional communication device" (Claim 13, preamble).

The subject matter of the first element (beginning with "wherein data transmitted") recited in Claim 13 is described, e.g., at: page 7, line 32 to page 8, line 3. Moreover, the subject

matter of the first element of Claim 13 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 14 is directed to a "bi-directional communication device" (Claim 14, preamble).

The subject matter of the first element (beginning with "wherein data transmitted") recited in Claim 14 is described, e.g., at: page 10, lines 11-12. Moreover, the subject matter of the first element of Claim 14 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 15 is directed to a "bi-directional communication device" (Claim 15, preamble).

The subject matter of the first element (beginning with "wherein the bi-directional") recited in Claim 15 is described, e.g., at: page 4 line 3; and page 7, lines 27-31. Moreover, the subject matter of the first element of Claim 15 involves, e.g.: element 105 of FIG. 1.

Dependent Claim 16 is directed to a "bi-directional communication device" (Claim 16, preamble).

The subject matter of the first element (beginning with "wherein the modem") recited in Claim 16 is described, e.g., at: page 4 line 3; and page 7, lines 27-31. Moreover, the subject matter of the first element of Claim 16 involves, e.g.: element 105 of FIG. 1.

Independent Claim 17 is directed to an "In a transmission system comprising a plurality of channels, wherein information is transmitted via one or more data transmission channels among the plurality of channels by a modulation arrangement in which information bits are encoded by symbols selected from a known symbol constellation, and further wherein the symbol constellation used for encoding the information bits is selected from a set of symbol constellations established in accordance with a known standard, a channel search method for

application at a receiving end of the data transmission channel" (Claim 17, preamble).

The subject matter of the first element (beginning with "sequentially scanning") recited in Claim 17 is described, e.g., at: page 8, lines 22-31. Moreover, the subject matter of the first element of Claim 17 involves, e.g.: elements 303, 308, 311, and 314 of FIG. 3.

The subject matter of the second element (beginning with "upon not finding the data channel in the sequential scanning step, scanning") recited in Claim 17 is described, e.g., at: page 8, lines 22-31. Moreover, the subject matter of the second element of Claim 17 involves, e.g.: elements 303-319 of FIG. 3.

The subject matter of the third element (beginning with "upon not finding the data channel in the sequential scanning step or the non-standard data channel") recited in Claim 17 is described, e.g., at: page 9, lines 2-3. Moreover, the subject matter of the third element of Claim 17 involves, e.g.: element 322 of FIG. 3.

6. Issues to be Reviewed on Appeal

Claim 17 stands rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2002/0144286A1 to Ovadia (hereinafter "Ovadia"). Claims 1-6, 8-13, 15, 16, 18, and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ovadia in view of U.S. Patent No. 6,212,563 to Beser (hereinafter "Beser"). Claims 7 and 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ovadia in view of Beser and U.S. Patent Publication No. 2002/0083465A1 to Van Beek (hereinafter "Van Beek").

The preceding rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) are presented for review in this Appeal with respect to Claims 1-19, as argued with respect to independent

Claims 1, 8, and 17.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C. §102(e), Claim 17 stands or falls by itself.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C. §103(a) with respect to Claims 1-6, 8-13, 15, 16, 18, and 19, Claims 2-6 stand or fall with Claim 1, and Claims 9-13, 15, and 16 stand or fall with Claim 8, and Claims 18-19 stand or fall with Claim 17, due to their respective dependencies.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C. §103(a) with respect to Claims 7 and 14, Claim 7 stands or falls by itself, and Claim 14 stands or falls by itself.

7. Argument

A. Introduction

In general, the present invention is directed to a method and apparatus for enhanced cable modem operation (Applicant's Specification, Title). As disclosed in the Applicant's specification at page 2, lines 4-20:

> While the primary application of DOCSIS-compliant cable modems is the modulation and demodulation of broadband data transmitted via a cable system, the technology is equally applicable to data transmission via other transmission media having the requisite bandwidth. Among such other transmission systems are fixed wireless broadband systems, such as a Microwave Multi-point

Distribution System (MMDS). However, such wireless broadband systems, as well as some cable systems could have reception issues that would not allow cable modems to operate properly when using the DOCSIS standard 256 QAM or 64 QAM modulation for the downstream channel. For example, wireless systems may be subject to variations in noise levels associated with a wireless environment. Also, certain cable systems may be subject to undesirably high noise conditions -- *e.g.*, systems that have not upgraded the trunk of the distribution system from coax to fiber, and systems where, in an effort to utilize all available bandwidth of existing equipment, channels have been added near the limits of the available bandwidth. Noise conditions in such wireless, wired, optical, coaxial, cable, and Hybrid Fiber-Coax (HFC) systems could cause a typical bi-directional communication device, such as a modem, to operate improperly or unreliably.

Advantageously, the present principles provide, in a transmission system comprising a plurality of transmission channels wherein at least one of said plurality of channels carries a data signal thereover, a channel search method for finding a data channel available for use by a terminal located at a downstream end of said plurality of transmission channels (Claim 1), a bi-directional communication device, operative to receive a data signal transmitted over at least one transmission channel selected from a plurality of transmission channels (Claim 8), and in a transmission system comprising a plurality of channels, wherein information is transmitted via one or more data transmission channels among the plurality of channels by a modulation arrangement in which

information bits are encoded by symbols selected from a known symbol constellation, and further wherein the symbol constellation used for encoding the information bits is selected from a set of symbol constellations established in accordance with a known standard, a channel search method for application at a receiving end of the data transmission channel (Claim 17).

The claims of the pending invention include novel features not shown in the cited references and that have already been pointed out to the Examiner. These features provide advantages over the prior art and dispense with prior art problems such as those described above with reference to the Applicant's specification.

It is respectfully asserted that independent Claims 1, 8, and 17 are each patentably distinct and non-obvious over the cited references in their own right. For example, the below-identified limitations of independent Claims 1, 8, and 17 are not shown in any of the cited references, either taken singly or in any combination. Moreover, these Claims are distinct from each other in that they are directed to different implementations and/or include different limitations. For example, Claim 1 is directed to a method, while Claim 8 is directed to a bi-directional communication device, and Claim 17 is directed to a method having different limitations than those recited in the method of Claim 1. Accordingly, each of independent Claims 1, 8, and 17 represent separate features/implementations of the invention that are separately novel and non-obvious with respect to the prior art and to the other claims. As such, independent Claims 1, 8, and 17 are separately patentable and are each presented for review in this appeal.

B. Whether Claim 17 is Anticipated Under 35 U.S.C. §102(e) With Respect To U.S.

Patent Publication No. 2002/0144286A1 to Ovadia

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Examiner rejected Claim 17 as being unpatentable over U.S. Patent Publication No. 2002/0144286A1 to Ovadia et al. (hereinafter "Ovadia"). The Examiner contends that Ovadia shows all the limitations recited in Claim 17.

Ovadia is directed to "system and related method facilitating the rapid detection and acquisition of a data channels in a cable modem" (Ovadia, Title). In further detail, Ovadia discloses the following in his Abstract:

> A method is presented comprising tuning a received of a broadband signal to a channel within the broadcast signal to receive information including one or more cable modem operating parameters, and updating one or more operating parameters of the cable modem in accordance with the received information.

It will be shown herein below that the limitations of Claim 17 reproduced herein are not shown in Ovadia, and that Claim 17 should be allowed.

B1. Claim 17

It is respectfully asserted that that none of the cited references, either taken singly or in

combination, teach or suggest the following limitations of Claim 17:

> sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said known standard (the "data channel");

The following portions of Ovadia were cited against the above recited limitations of Claim 17: paragraphs [0045]-[0047] and elements 510 to 506 of FIG. 5. In further detail, with respect to the limitation of Claim 17 reproduced above, the Examiner cited the following (emphasis added): "sequentially scanning (sweeps, [0047], line 1) at least two selected subsets (**non-digital**, [0045], lines 8-9, and data channel, [0047], line 5) of said plurality of channels ([0045], lines 2-3) for a channel having a data signal ([0047], 3rd line from the end, and [0045], line 9)…."

However, paragraph [0045] of Ovadia explicitly discloses the following (emphasis added):

> FIG. 5 illustrates a flow chart of an example method of identifying data channels within a plurality of multimedia channels in a cable network, according to one embodiment of the present invention. In accordance with the illustrated example implementation of FIG. 5, the **method begins** with block 502 wherein channel detection agent 214 **eliminates from the search** bandwidth **channels associated**

with analog media content and/or other types of ***non-digital signal sources***. In implementations where a system operator has aggregated such digital content to a particular spectrum within the broadband bandwidth (e.g., between 500-860MHZ), and this information is available to the channel detection agent 214 via, for example, a pre-populated lookup table in memory 210, channel detection agent eliminates such spectrum from a list of QAM channels to be tested.

Hence, Ovadia does **not** teach sequentially scanning channels associated with non-digital signal sources as one of at least two selected subsets, but rather eliminates the same at the very start of his method, i.e., before performing any sequential scanning and, thus, clearly does not include such channels associated with non-digital signal sources in his sequential scanning (sweeps).

Hence, the cited portion of Ovadia (para. [0045]) does not teach the above recited limitations of Claim 17, since Ovadia does not teach channels associated with non-digital sources as being included in the sequential scanning, but rather eliminates the same immediately at the start of his method (i.e., before commencing the sequential scanning in the first place).

Further, it is respectfully asserted that Ovadia does not teach or suggest the following additional limitations of Claim 17:

upon Not Finding the data channel in the sequential scanning step, scanning at least one, but less than all, of the selected subsets of the plurality of

channels for a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard (the "non-standard data channel")

First, it is noted that words in the pre-amble are given consideration in determining patentability depending on the particular circumstances, with the pending claims falling within such circumstances, as essentially acknowledged by the Examiner given the fact that the Examiner, in the pending Office Action, specifically addressed such pre-amble limitations (i.e., specifically correlated the pre-amble limitations to one or more portions of the cited reference).

In further support of the patentable consideration due the preamble of Claim 17, the Examiner is pointed to MPEP 2111.02, which states

> The determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim. *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002).
>
> "[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim

preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999). See also *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1333, 68 USPQ2d 1154, 1158 (Fed. Cir. 2003)(In considering the effect of the preamble in a claim directed to a method of treating or preventing pernicious anemia in humans by administering a certain vitamin preparation to "a human in need thereof," the court held that the claims' recitation of a patient or a human "in need" gives life and meaning to the preamble's statement of purpose.). *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) (A preamble reciting "An abrasive article" was deemed essential to point out the invention defined by claims to an article comprising abrasive grains and a hardened binder and the process of making it. The court stated "it is only by that phrase that it can be known that the subject matter defined by the claims is comprised as an abrasive article. Every union of substances capable *inter alia* of use as abrasive grains and a binder is not an 'abrasive article.'" Therefore, the preamble served to further define the structure of the article produced.).

…

[A] "preamble may provide context for claim construction, particularly, where ... that preamble's statement of intended use forms the basis for distinguishing the

> prior art in the patent's prosecution history." *Metabolite Labs., Inc. v. Corp. of Am. Holdings*, 370 F.3d 1354, 1358-62, 71 USPQ2d 1081, 1084-87 (Fed. Cir. 2004).
>
> ...
>
> See also *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d at 808-09, 62 USPQ2d at 1785 ("[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention...

Here, the Examiner's addressing of the specific limitations of the preambles by correlating the same to one or more portions of the cited reference is considered to be an admission on the part of the Examiner of the (patentable) importance of the preamble to the claims. For example, but not to be construed as limited solely thereto, the following language, *inter alia*, in the preamble relating to "a channel search method for application at a **receiving end** of the data transmission channel" (i.e., downstream communications) is considered to give life, meaning, and vitality to the claim, as well as, when read in the context of the entire claim, recites limitations of the claim.

Keeping that in mind, Ovadia explicitly discloses that DOCSIS downstream communications involve 64 or 256 QAM (Ovadia, para. [0005]). The instant application also discloses that DOCSIS downstream communications involve 64 or 256 QAM (see, e.g., Applicants' specification, p. 2, lines 11-12. Hence, a predetermined modulation protocol for DOCSIS-compliant downstream communications is limited to such modulation protocol

involving 64 or 256 QAM.

Thus, in Claim 17, the *further* sequential scanning is performed if the **data channel** having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said *known standard* **is NOT FOUND**, and also that the *further* sequential scanning is performed for a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation *other than* one of said symbol constellations established *in accordance with said known standard*.

Moreover, it is to be appreciated that irrespective of whether downstream communications are explicitly references in the Claims, Ovadia always searches for modulation protocols in accordance with the DOCSIS standard and not for any modulation protocols that do not correspond to the DOCSIS standard. Hence, in a sequential search, such a search would have to be either for downstream or upstream communications and, in either case, the sequential search disclosed by Ovadia so searches for signals modulated using a modulation protocol in accordance with the DOCSIS standard.

Thus, at the onset, it is respectfully pointed out that Ovadia does not mention "a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard" as recited in Claim 17. This is because Ovadia is directed to modulation protocols in accordance with the DOCSIS standard (see, e.g., Ovadia, paragraphs [0025] and [0034]), and thus makes no mention (as there is no reason to do so) whatsoever regarding "a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard" as recited in Claim 17.

That is, in further detail, with respect to downstream communications, since Ovadia is directed to the DOCSIS standard, his search with respect to downstream communications is limited to data signals modulated in accordance with symbols from symbol constellations pertaining to 64 and 256 QAM as established in accordance with the DOCSIS standard. Similarly, any upstream search by Ovadia would also be limited to data signals modulated in accordance with symbols from symbol constellations pertaining to those as established in accordance with the DOCSIS standard. Hence, there is no reason nor need for Ovadia to search for "a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard" as recited in Claim 17.

As such, Ovadia also does not teach the additional above-recited limitations of Claim 17.

Accordingly, Claim 17 is patentably distinct and non-obvious over Ovadia for at least the reasons set forth above. Therefore, withdrawal of the rejection and allowance of Claim 17 is earnestly requested.

C. Whether Claims 1-6, 8-13, 15, 16, 18, and 19 are Unpatentable Under 35 U.S.C. §103(a) With Respect To U.S. Patent Publication No. 2002/0144286A1 to Ovadia in view of U.S. Patent No. 6,212,563 to Beser

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d

1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The Examiner rejected Claims 1-6, 8-13, 15, 16, 18, and 19 as being unpatentable over U.S. Patent Publication No. 2002/0144286A1 to Ovadia (hereinafter "Ovadia") in view of U.S. Patent No. 6,212,563 to Beser (hereinafter "Beser"). The Examiner contends that the cited combination shows all the limitations recited in Claims 1-6, 8-13, 15, 16, 18, and 19.

Ovadia is directed to "system and related method facilitating the rapid detection and acquisition of a data channels in a cable modem" (Ovadia, Title). In further detail, Ovadia discloses the following in his Abstract:

> A method is presented comprising tuning a received of a broadband signal to a channel within the broadcast signal to receive information including one or more cable modem operating parameters, and updating one or more operating parameters of the cable modem in accordance with the received information.

Beser is directed to a "method and system for setting and managing externally provided Internet protocol addresses using the dynamic host configuration protocol" (Beser, Title). In further detail, Beser discloses the following in his Abstract:

> A system and method for allocating IP addresses for network devices using the dynamic host configuration protocol (DHCP) wherein the DHCP server returns the requested IP address every time the IP address is requested. A client identifier is generated for each network device as a function of the IP address. The

client identifier is used in the DHCP options field of the DHCP parameter list in a DHCPDISCOVERY message. The DHCP server indexes the network device configuration parameters according to the client identifier and returns the same IP address each time the DHCP is queried.

It will be shown herein below that the limitations of Claims 1-6, 8-13, 15, 16, 18, and 19 reproduced herein (as argued with respect to independent Claims 1, 8, 17 from which they respectively depend) are not shown in the cited combination, and that Claims 1-6, 8-13, 15, 16, 18, and 19 should be allowed.

C1. Claims 1-6, 8-13, 15, 16, 18, and 19

Initially, it is respectfully pointed out to the Examiner that Claims 1-6 directly or indirectly depend from independent Claim 1, Claims 9-13 and 15-16 directly or indirectly depend from independent Claim 8, and Claims 18-19 directly or indirectly depend from independent Claim 17. Thus, Claims 2-6 include all the limitations of Claim 1, Claims 9-13 and 15-16 include all the limitations of Claim 8, and Claims 18-19 include all the limitations of Claim 17.

It is respectfully asserted that neither Ovadia nor Beser, either taken singly or in combination, teach or suggest the following limitations of Claims 1-6 (with the following applicable to Claims 2-6 by virtue of their respective dependencies from Claim 1):

sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal transmitted at a predetermined

modulation protocol;

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claims 8-13 and 15-16 (with the following applicable to Claims 9-13 and 15-16 by virtue of their respective dependencies from Claim 8):

> receiving and channel-search means operative to sequentially scan at least two selected subsets of said plurality of transmission channels for a channel having a data signal transmitted at a predetermined modulation protocol;

Further, it is respectfully asserted that that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claims 18-19 (by virtue of their respective dependencies from Claim 17):

> sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said known standard…;

The following portions of Ovadia were cited against the above recited limitations of Claims 1-6, 8-13, 15, 16, 18, and 19 (by virtue of their respective dependencies from Claims 1, 8,

and 17): paragraphs [0045]-[0047] and elements 510 to 506 of FIG. 5. In further detail, with respect to the limitation reproduced above, the Examiner cited the following (emphasis added): "sequentially scanning (sweeps, [0047], line 1) at least two selected subsets (**non-digital**, [0045], lines 8-9, and data channel, [0047], line 5) of said plurality of channels ([0045], lines 2-3) for a channel having a data signal ([0047], 3rd line from the end, and [0045], line 9)…."

However, paragraph [0045] of Ovadia explicitly discloses the following (emphasis added):

> FIG. 5 illustrates a flow chart of an example method of identifying data channels within a plurality of multimedia channels in a cable network, according to one embodiment of the present invention. In accordance with the illustrated example implementation of FIG. 5, the **method begins** with block 502 wherein channel detection agent 214 **eliminates from the search** bandwidth **channels associated with** analog media content and/or other types of ***non-digital signal sources***. In implementations where a system operator has aggregated such digital content to a particular spectrum within the broadband bandwidth (e.g., between 500-860MHZ), and this information is available to the channel detection agent 214 via, for example, a pre-populated lookup table in memory 210, channel detection agent eliminates such spectrum from a list of QAM channels to be tested.

Hence, Ovadia does **not** teach sequentially scanning channels associated with non-digital signal sources as one of at least two selected subsets, but rather eliminates the

same at the very start of his method, i.e., before performing any sequential scanning and, thus, clearly does not include such channels associated with non-digital signal sources in his sequential scanning (sweeps).

Hence, the cited portion of Ovadia (para. [0045]) does not teach the above recited limitations of Claims 1-6, 8-13, 15, 16, 18, and 19, since Ovadia does not teach channels associated with non-digital sources as being included in the sequential scanning, but rather eliminates the same immediately at the start of his method (i.e., before commencing the sequential scanning in the first place).

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claim 1-6 (with the following applicable to Claims 2-6 by virtue of their respective dependencies from Claim 1):

> **if the data channel scanned for in the preceding step is NOT FOUND**, further sequentially scanning at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol

Further, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claims 8-13 and 15-16 (with the following applicable to Claims 9-13 and 15-16 by virtue of their respective dependencies from Claim 8):

the receiving and channel-search means being further operative, **upon NOT FINDING the data channel during the sequential scan**, to scan at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol.

Also, it is respectfully asserted that that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claims 18-19 (by virtue of their respective dependencies from Claim 17):

upon Not Finding the data channel in the sequential scanning step, scanning at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard (the "non-standard data channel")

First, it is noted that words in the pre-amble are given consideration in determining patentability depending on the particular circumstances, with the pending claims falling within such circumstances, as essentially acknowledged by the Examiner given the fact that the Examiner, in the pending Office Action, specifically addressed

such pre-amble limitations (i.e., specifically correlated the pre-amble limitations to one or more portions of the cited reference).

In further support of the patentable consideration due the preambles of Claims 1-6, 8-13, 15, 16, 18, and 19, the Examiner is pointed to MPEP 2111.02, which states

> The determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim. *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002).
>
> "[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999). See also *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1333, 68 USPQ2d 1154, 1158 (Fed. Cir. 2003)(In considering the effect of the preamble in a claim directed to a method of treating or preventing pernicious anemia in humans by administering a certain vitamin preparation to "a human in need thereof," the court held that the claims' recitation

of a patient or a human "in need" gives life and meaning to the preamble's statement of purpose.). *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) (A preamble reciting "An abrasive article" was deemed essential to point out the invention defined by claims to an article comprising abrasive grains and a hardened binder and the process of making it. The court stated "it is only by that phrase that it can be known that the subject matter defined by the claims is comprised as an abrasive article. Every union of substances capable *inter alia* of use as abrasive grains and a binder is not an 'abrasive article.'" Therefore, the preamble served to further define the structure of the article produced.).

...

[A] "preamble may provide context for claim construction, particularly, where ... that preamble's statement of intended use forms the basis for distinguishing the prior art in the patent's prosecution history." *Metabolite Labs., Inc. v. Corp. of Am. Holdings*, 370 F.3d 1354, 1358-62, 71 USPQ2d 1081, 1084-87 (Fed. Cir. 2004).

...

See also *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d at 808-09, 62 USPQ2d at 1785 ("[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention...

Here, the Examiner's addressing of the specific limitations of the preambles by

correlating the same to one or more portions of the cited reference is considered to be an admission on the part of the Examiner of the (patentable) importance of the preamble to the claims. For example, but not to be construed as limited solely thereto, the following language, *inter alia*, in the preamble relating to "finding a data channel available for use … at a downstream end" as recited in Claim 1 (and, hence, also Claims 2-6) and to "a channel search method for application at a **receiving end** of the data transmission channel" (i.e., downstream communications) as recited in Claim 17 (and, hence, also Claims 18 and 19) is considered to give life, meaning, and vitality to the respective claims, as well as, when read in the contexts of the respective entire claims, recites limitations of the claims.

Keeping that in mind, Ovadia explicitly discloses that DOCSIS downstream communications involve 64 or 256 QAM (Ovadia, para. [0005]). The instant application also discloses that DOCSIS downstream communications involve 64 or 256 QAM (see, e.g., Applicants' specification, p. 2, lines 11-12. Hence, a predetermined modulation protocol for DOCSIS-compliant downstream communications is limited to such modulation protocol involving 64 or 256 QAM.

In each of Claims 1 and 8, the *further* sequential scanning is performed if the **data channel** having a data signal transmitted at a predetermined modulation protocol **is NOT FOUND**, and also that the *further* sequential scanning is performed for a channel having a data signal transmitted at other than said predetermined modulation protocol.

Moreover, in Claim 17, the *further* sequential scanning is performed if the **data channel** having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said known standard **is NOT FOUND**, and also

that the *further* sequential scanning is performed for a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard.

Moreover, it is to be appreciated that irrespective of whether downstream communications are explicitly references in the Claims, Ovadia always searches for modulation protocols in accordance with the DOCSIS standard and not for any modulation protocols that do not correspond to the DOCSIS standard. Hence, in a sequential search, such a search would have to be either for downstream or upstream communications and, in either case, the sequential search disclosed by Ovadia so searches for signals modulated using a modulation protocol in accordance with the DOCSIS standard.

Thus, at the onset, it is respectfully pointed out neither Ovadia nor Beser disclose "a channel having a data signal transmitted at **other than** said predetermined modulation protocol" as recited in Claims 1 and 8, nor do they disclose "a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation **other than** one of said symbol constellations established in accordance with said known standard" as recited in Claim 17. This is because Ovadia is directed to modulation protocols in accordance with the DOCSIS standard (see, e.g., Ovadia, paragraphs [0025] and [0034]), and thus makes no mention (as there is no reason to do so) of the preceding limitations of Claims 1, 8, and 17 (and, hence, collectively Claims 1-6, 8-13, 15, 16, 18, and 19). Further, the remaining reference does not cure the deficiencies of Ovadia in this regard.

That is, in further detail, with respect to downstream communications, since Ovadia is directed to the DOCSIS standard, his search with respect to downstream communications is

limited to data signals modulated in accordance with symbols from symbol constellations pertaining to 64 and 256 QAM as established in accordance with the DOCSIS standard). Similarly, any upstream search by Ovadia would also be limited to data signals transmitted at the predetermined modulation protocol in accordance with the DOCSIS standard or modulated in accordance with symbols from symbol constellations pertaining to those as established in accordance with the DOCSIS standard. Hence, there is no reason nor need for Ovadia to search for "a data signal transmitted at **other than** said predetermined modulation protocol" as recited in Claims 1 and 8, or "a data signal modulated thereon in accordance with symbols from a symbol constellation **other than** one of said symbol constellations established in accordance with said known standard" as recited in Claim 17.

Further, Beser simply mentions that "QAM can have any number of discrete digital levels typically including 4, 16, 64 or 256 levels" (Beser, col. 6, lines 65-66), and makes no mention whatsoever regarding any of the preceding levels belong to "a channel having a data signal transmitted at other than said predetermined modulation protocol" as recited in each of Claims 1 and 8 or to "a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard" as recited in Claim 17.

Hence, it is unreasonable to cite Ovadia and Beser in combination as disclosing all the above recited limitations of Claims 1-6, 8-13, 15, 16, 18, and 19, where Ovadia is simply showing sequential scanning (for modulation protocols in accordance with the DOCSIS standard) WITHOUT MORE, while all (as relied upon by the Examiner) Beser mentions is that QAM may include 4, 16, 64 or 256 levels WITHOUT MORE. For example, the further sequential scanning,

recited in Claims 1-6, 8-13, and 15-16 of at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol, **is only performed** if the data channel scanned for at the predetermined modulation protocol is not found. Moreover, the further scanning, recited in Claims 18-19 of at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard, **is only performed** if the data channel scanned for modulated in accordance with symbols from one of said symbol constellations established in accordance with said known standard is not found. This condition, premised on, *inter alia*, essentially having unsuccessfully searched with respect to a predetermined modulation protocol or with respect to a signal modulated in accordance with symbols from one of said symbol constellation established in accordance with said known standard, is not disclosed nor even remotely suggested by the references, either taken singly or in combination. While it may be true that QAM may include 4, 16, 64, or 256 levels, as disclosed in Beser, there is no consideration in Ovadia (nor Beser) with respect to using any levels other than those specified by a given predetermined modulation protocol (as mentioned above, even Ovadia acknowledges that DOCSIS downstream communications involve 64 or 256 QAM and does not mention or even remotely suggest scanning for a data signal transmitted at other than said predetermined modulation protocol for DOCSIS downstream communications.

Stated another way, as acknowledged by Ovadia and re-iterated in the instant application, DOCSIS downstream communications are limited to 64 or 256 QAM and, hence, sequentially

scanning for DOCSIS downstream communications in Ovadia is performed limited to the same. Even though QAM may include other levels as disclosed by Beser, that fact alone, cannot be said to give rise to going against the teachings of Ovadia and using a modulation protocol other than the predetermined modulation protocol of DOCSIS downstream communication, as Ovadia certainly provides no suggestion or motivation to implement the same, and in fact, teaches away from combining the same with Beser as proposed by the Examiner.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either implicitly or explicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art (see, e.g., MPEP §2143.01).

A prior art reference must be considered in its entirety, i.e., as a whole, INCLUDING PORTIONS THAT WOULD LEAD AWAY FROM THE CLAIMED INVENTION. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (emphasis added) (*see also*, MPEP §2141.02)).

As set forth in MPEP 2145:

> It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) (The claimed catalyst which contained both iron and an alkali metal was not suggested by the combination of a reference which taught the interchangeability of antimony and alkali metal with the same beneficial result, combined with a reference expressly excluding antimony from, and adding iron

to, a catalyst.).

As such, neither Ovadia nor Beser, either taken singly or in combination, teach the additional above-recited limitations of Claims 1-6, 8-13, 15, 16, 18, and 19.

Accordingly, Claims 1-6, 8-13, 15, 16, 18, and 19 are patentably distinct and non-obvious over Ovadia and Beser for at least the reasons set forth above. Therefore, withdrawal of the rejection and allowance of Claims 1-6, 8-13, 15, 16, 18, and 19 is earnestly requested.

D. Whether Claims 7 and 14 are Unpatentable Under 35 U.S.C. §103(a) With Respect To U.S. Patent Publication No. 2002/0144286A1 to Ovadia in view of U.S. Patent No. 6,212,563 to Beser and U.S. Patent Publication No. 2002/0083465A1 to Van Beek

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The Examiner rejected Claims 7 and 14 as being unpatentable over U.S. Patent Publication No. 2002/0144286A1 to Ovadia (hereinafter "Ovadia") in view of U.S. Patent No. 6,212,563 to Beser (hereinafter "Beser") and U.S. Patent Publication No. 2002/0083465A1 to Van Beek (hereinafter "Van Beek"). The Examiner contends that the cited combination shows all the limitations recited in Claims 7 and 14.

Ovadia is directed to "system and related method facilitating the rapid detection and acquisition of a data channels in a cable modem" (Ovadia, Title). In further detail, Ovadia discloses the following in his Abstract:

> A method is presented comprising tuning a received of a broadband signal to a channel within the broadcast signal to receive information including one or more cable modem operating parameters, and updating one or more operating parameters of the cable modem in accordance with the received information.

Beser is directed to a "method and system for setting and managing externally provided Internet protocol addresses using the dynamic host configuration protocol" (Beser, Title). In further detail, Beser discloses the following in his Abstract:

> A system and method for allocating IP addresses for network devices using the dynamic host configuration protocol (DHCP) wherein the DHCP server returns the requested IP address every time the IP address is requested. A client identifier is generated for each network device as a function of the IP address. The client identifier is used in the DHCP options field of the DHCP parameter list in a DHCPDISCOVERY message. The DHCP server indexes the network device configuration parameters according to the client identifier and returns the same IP address each time the DHCP is queried.

Van Beek is directed to a "CATV system" (Van Beek, Title). In further detail, Van Beek discloses the following in his Abstract:

> The CATV system (8) according to the invention comprises a primary station (2) and a secondary station (4). The CATV system (8) has a frequency band (12) with a plurality of substantially equally spaced and sized frequency channels (10). The CATV system (8) is arranged for transmitting data signals in at least part of the frequency channels (10) from the primary station (2) to the secondary station (4). The secondary station (4) comprises acquire means for acquiring a frequency channel (10) in which at least part of the data signals are transmitted. The acquire means are arranged for scanning the frequency band (12) in frequency steps which are substantially equal to the size of the frequency channels (10) from a starting frequency until a frequency channel (10) carrying data signals is found. In this way it is possible to acquire a frequency channel (10) relatively fast.

It will be shown herein below that the limitations of Claims 7 and 14 reproduced herein (as argued with respect to independent Claims 1 and 8 from which they respectively depend) are not shown in the cited combination, and that Claims 7 and 14 should be allowed.

D1. Claims 7 and 14

Initially, it is respectfully pointed out to the Examiner that Claims 7 and 14 respectively depend from independent Claims 1 and 8, and thus respectively include all the limitations of Claims 1 and 8.

It is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claims 7 (by virtue of its dependency from Claim 1):

> sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal transmitted at a predetermined modulation protocol;

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claim 14 (by virtue of its dependency from Claim 8):

> receiving and channel-search means operative to sequentially scan at least two selected subsets of said plurality of transmission channels for a channel having a data signal transmitted at a predetermined modulation protocol;

The following portions of Ovadia were cited against the above recited limitations of Claims 7 and 14 (by virtue of their respective dependencies from Claims 1 and 8): paragraphs [0045]-[0047] and elements 510 to 506 of FIG. 5. In further detail, with respect to the limitation

reproduced above, the Examiner cited the following (emphasis added): "sequentially scanning (sweeps, [0047], line 1) at least two selected subsets (**non-digital**, [0045], lines 8-9, and data channel, [0047], line 5) of said plurality of channels ([0045], lines 2-3) for a channel having a data signal ([0047], 3rd line from the end, and [0045], line 9)…."

However, paragraph [0045] of Ovadia explicitly discloses the following (emphasis added):

> FIG. 5 illustrates a flow chart of an example method of identifying data channels within a plurality of multimedia channels in a cable network, according to one embodiment of the present invention. In accordance with the illustrated example implementation of FIG. 5, the **method begins** with block 502 wherein channel detection agent 214 **eliminates from the search** bandwidth **channels associated with** analog media content and/or other types of ***non-digital signal sources***. In implementations where a system operator has aggregated such digital content to a particular spectrum within the broadband bandwidth (e.g., between 500-860MHZ), and this information is available to the channel detection agent 214 via, for example, a pre-populated lookup table in memory 210, channel detection agent eliminates such spectrum from a list of QAM channels to be tested.

Hence, Ovadia does **not** teach sequentially scanning channels associated with non-digital signal sources as one of at least two selected subsets, but rather eliminates the same at the very start of his method, i.e., before performing any sequential scanning and,

thus, clearly does not include such channels associated with non-digital signal sources in his sequential scanning (sweeps).

Hence, the cited portion of Ovadia (para. [0045]) does not teach the above recited limitations of Claims 7 and 14, since Ovadia does not teach channels associated with non-digital sources as being included in the sequential scanning, but rather eliminates the same immediately at the start of his method (i.e., before commencing the sequential scanning in the first place).

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claim 7 (by virtue of its dependency from Claim 1):

if the data channel scanned for in the preceding step is NOT FOUND, further sequentially scanning at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol

Further, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations of Claim 14 (by virtue of its dependency from Claim 8):

the receiving and channel-search means being further operative, **upon NOT FINDING the data channel during the sequential scan**, to scan at least

one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol.

First, it is noted that words in the pre-amble are given consideration in determining patentability depending on the particular circumstances, with the pending claims falling within such circumstances, as essentially acknowledged by the Examiner given the fact that the Examiner, in the pending Office Action, specifically addressed such pre-amble limitations (i.e., specifically correlated the pre-amble limitations to one or more portions of the cited reference).

In further support of the patentable consideration due the preamble of Claim 7 (by virtue if its dependency from Claim 1), the Examiner is pointed to MPEP 2111.02, which states

The determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim. *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002).

"[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim

preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999). See also *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1333, 68 USPQ2d 1154, 1158 (Fed. Cir. 2003)(In considering the effect of the preamble in a claim directed to a method of treating or preventing pernicious anemia in humans by administering a certain vitamin preparation to "a human in need thereof," the court held that the claims' recitation of a patient or a human "in need" gives life and meaning to the preamble's statement of purpose.). *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) (A preamble reciting "An abrasive article" was deemed essential to point out the invention defined by claims to an article comprising abrasive grains and a hardened binder and the process of making it. The court stated "it is only by that phrase that it can be known that the subject matter defined by the claims is comprised as an abrasive article. Every union of substances capable *inter alia* of use as abrasive grains and a binder is not an 'abrasive article.'" Therefore, the preamble served to further define the structure of the article produced.).

…

[A] "preamble may provide context for claim construction, particularly, where ... that preamble's statement of intended use forms the basis for distinguishing the

prior art in the patent's prosecution history." *Metabolite Labs., Inc. v. Corp. of Am. Holdings*, 370 F.3d 1354, 1358-62, 71 USPQ2d 1081, 1084-87 (Fed. Cir. 2004).

...

See also *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d at 808-09, 62 USPQ2d at 1785 ("[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention...

Here, the Examiner's addressing of the specific limitations of the preamble by correlating the same to one or more portions of the cited reference is considered to be an admission on the part of the Examiner of the (patentable) importance of the preamble to the claims. For example, but not to be construed as limited solely thereto, the following language, *inter alia*, in the preamble relating to "finding a data channel available for use ... at a downstream end" as recited in Claim 1 (and, hence, also Claim 7) is considered to give life, meaning, and vitality to the respective claims, as well as, when read in the contexts of the respective entire claims, recites limitations of the claims.

Keeping that in mind, Ovadia explicitly discloses that DOCSIS downstream communications involve 64 or 256 QAM (Ovadia, para. [0005]). The instant application also discloses that DOCSIS downstream communications involve 64 or 256 QAM (see, e.g., Applicants' specification, p. 2, lines 11-12. Hence, a predetermined modulation protocol for DOCSIS-compliant downstream communications is limited to such modulation protocol

involving 64 or 256 QAM.

In each of Claims 1 and 8 (and, hence, Claims 7 and 14, respectively), the *further* sequential scanning is performed if the **data channel** having a data signal transmitted at a predetermined modulation protocol **is NOT FOUND**, and also that the *further* sequential scanning is performed for a channel having a data signal transmitted at other than said predetermined modulation protocol.

At the onset, it is respectfully pointed out neither Ovadia nor Beser nor Van Beek disclose "a channel having a data signal transmitted at **other than** said predetermined modulation protocol" as recited in Claims 1 and 8. This is because Ovadia is directed to modulation protocols in accordance with the DOCSIS standard (see, e.g., Ovadia, paragraphs [0025] and [0034]), and thus makes no mention (as there is no reason to do so) of the preceding limitations of Claims 1 and 8 (and, hence, Claims 7 and 14, respectively. Further, the remaining references do not cure the deficiencies of Ovadia in this regard.

That is, in further detail, with respect to downstream communications, since Ovadia is directed to the DOCSIS standard, his search with respect to downstream communications is limited to data signals modulated in accordance with symbols from symbol constellations pertaining to 64 and 256 QAM as established in accordance with the DOCSIS standard. Similarly, any upstream search by Ovadia would also be limited to data signals transmitted at the predetermined modulation protocol in accordance with the DOCSIS standard. Hence, there is no reason nor need for Ovadia to search for "a data signal transmitted at **other than** said predetermined modulation protocol" as recited in Claims 1 and 8.

Further, Beser simply mentions that "QAM can have any number of discrete digital levels

typically including 4, 16, 64 or 256 levels" (Beser, col. 6, lines 65-66), and makes no mention whatsoever regarding any of the preceding levels belong to "a channel having a data signal transmitted at other than said predetermined modulation protocol" as recited in each of Claims 1 and 8.

Hence, it is unreasonable to cite Ovadia and Beser in combination as disclosing all the above recited limitations of Claims 7 and 14, where Ovadia is simply showing sequential scanning (for modulation protocols in accordance with the DOCSIS standard) WITHOUT MORE, while all (as relied upon by the Examiner) Beser mentions is that QAM may include 4, 16, 64 or 256 levels WITHOUT MORE. For example, the further sequential scanning, recited in Claims 7 and 14 of at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol, **is only performed** if the data channel scanned for at the predetermined modulation protocol is not found. This condition, premised on, *inter alia*, essentially having unsuccessfully searched with respect to a predetermined modulation protocol or with respect to a signal modulated in accordance with symbols from one of said symbol constellation established in accordance with said known standard, is not disclosed nor even remotely suggested by the references, either taken singly or in combination. While it may be true that QAM may include 4, 16, 64, or 256 levels, as disclosed in Beser, there is no consideration in Ovadia (nor Beser nor Van Beek) with respect to using any levels other than those specified by a given predetermined modulation protocol (as mentioned above, even Ovadia acknowledges that DOCSIS downstream communications involve 64 or 256 QAM and does not mention or even remotely suggest scanning for a data signal transmitted at other than said predetermined modulation protocol for

DOCSIS downstream communications.

Stated another way, as acknowledged by Ovadia and re-iterated in the instant application, DOCSIS downstream communications are limited to 64 or 256 QAM and, hence, sequentially scanning for DOCSIS downstream communications in Ovadia is performed limited to the same. Even though QAM may include other levels as disclosed by Beser, that fact alone, cannot be said to give rise to going against the teachings of Ovadia and using a modulation protocol other than the predetermined modulation protocol of DOCSIS downstream communication, as Ovadia certainly provides no suggestion or motivation to implement the same, and in fact, teaches away from combining the same with Beser and Van Beek as proposed by the Examiner.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either implicitly or explicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art (see, e.g., MPEP §2143.01).

A prior art reference must be considered in its entirety, i.e., as a whole, INCLUDING PORTIONS THAT WOULD LEAD AWAY FROM THE CLAIMED INVENTION. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (emphasis added) (*see also*, MPEP §2141.02)).

As set forth in MPEP 2145:

> It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) (The claimed catalyst which contained both iron and an alkali metal

was not suggested by the combination of a reference which taught the interchangeability of antimony and alkali metal with the same beneficial result, combined with a reference expressly excluding antimony from, and adding iron to, a catalyst.).

As such, neither Ovadia nor Beser nor Van Beek, either taken singly or in combination, teach the additional above-recited limitations of Claims 7 and 14.

Accordingly, Claims 7 and 14 are patentably distinct and non-obvious over Ovadia and Beser and Van Beek for at least the reasons set forth above. Therefore, withdrawal of the rejection and allowance of Claims 7 and 14 is earnestly requested.

E. Conclusion

At least the above-identified limitations of the pending claims are not disclosed or suggested by the teachings of the cited references. Accordingly, it is respectfully requested that the Board reverse the rejections of Claim 1-19 under 35 U.S.C. §102(e) and §103(a).

Please charge the amount of $500.00, covering fee associated with the filing of the Appeal Brief, to **Thomson Licensing Inc., Deposit Account No. 07-0832**. In the event of any non-payment or improper payment of a required fee, the Commissioner is authorized to charge **Deposit Account No. 07-0832** as required to correct the error.

Respectfully submitted,

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July 18, 2008

8. CLAIMS APPENDIX

1. (original) In a transmission system comprising a plurality of transmission channels wherein at least one of said plurality of channels carries a data signal thereover, a channel search method for finding a data channel available for use by a terminal located at a downstream end of said plurality of transmission channels, said method comprising the steps of:

sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal transmitted at a predetermined modulation protocol; and

if the data channel scanned for in the preceding step is not found, further sequentially scanning at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol.

2. (original) The channel search method of claim 1 including the further step of:

sequentially scanning all of said plurality of channels for a channel having a data signal transmitted at said predetermined modulation protocol.

3. (original) The channel search method of claim 1 wherein the first sequential scanning step is repeated at least once prior to beginning the step of scanning at least one of the selected subsets.

4. (original) The channel search method of claim 1 wherein the predetermined modulation protocol is either 64 QAM or 256 QAM, and wherein the modulation protocol other than said predetermined modulation protocol is 16 QAM.

5. (original) The channel search method of claim 1 wherein the predetermined modulation protocol is either 64 QAM or 256 QAM, and wherein the modulation protocol other than said predetermined modulation protocol is 4 QAM.

6. (original) The channel search method of claim 1 wherein data transmitted via said

data channel available for use by said terminal is in accordance with the DOCSIS standard.

7. (original) The channel search method of claim 1 wherein data transmitted via said data channel available for use by said terminal is in accordance with the Euro-DOCSIS standard.

8. (original) A bi-directional communication device, operative to receive a data signal transmitted over at least one transmission channel selected from a plurality of transmission channels, comprising:

receiving and channel-search means operative to sequentially scan at least two selected subsets of said plurality of transmission channels for a channel having a data signal transmitted at a predetermined modulation protocol; and

the receiving and channel-search means being further operative, upon not finding the data channel during the sequential scan, to scan at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data signal transmitted at other than said predetermined modulation protocol.

9. (original) The bi-directional communication device of claim 8 wherein the receiving and channel-search means is still further operative to scan all of the plurality of channels for a channel having a data signal transmitted at said predetermined modulation protocol.

10. (original) The bi-directional communication device of claim 8 wherein the receiving and channel-search means further operates to repeat the first sequential scan at least once prior to beginning the scan of the at least one of the selected subsets.

11. (original) The bi-directional communication device of claim 8 wherein the predetermined modulation protocol is either 64 QAM or 256 QAM, and wherein the modulation protocol other than the predetermined modulation protocol is 16 QAM.

12. (original) The bi-directional communication device of claim 8 wherein the

predetermined modulation protocol is either 64 QAM or 256 QAM, and wherein the modulation protocol other than the predetermined modulation protocol is 4 QAM.

13. (original) The bi-directional communication device of claim 8 wherein data transmitted via said at least one transmission channel is in accordance with the DOCSIS standard.

14. (original) The bi-directional communication device of claim 8 wherein data transmitted via said at least one transmission channel is in accordance with the Euro-DOCSIS standard.

15. (original) The bi-directional communication device of claim 8 wherein the bi-directional communication device is a modem.

16. (original) The bi-directional communication device of claim 15 wherein the modem is a cable modem.

17. (original) In a transmission system comprising a plurality of channels, wherein information is transmitted via one or more data transmission channels among the plurality of channels by a modulation arrangement in which information bits are encoded by symbols selected from a known symbol constellation, and further wherein the symbol constellation used for encoding the information bits is selected from a set of symbol constellations established in accordance with a known standard, a channel search method for application at a receiving end of the data transmission channel comprising the steps of:

sequentially scanning at least two selected subsets of said plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said known standard (the "data channel");

upon not finding the data channel in the sequential scanning step, scanning at least one, but less than all, of the selected subsets of the plurality of channels for a channel having a data

signal modulated thereon in accordance with symbols from a symbol constellation other than one of said symbol constellations established in accordance with said known standard (the "non-standard data channel"); and

upon not finding the data channel in the sequential scanning step or the non-standard data channel in the step of scanning at least one of the selected subsets, scanning all of said plurality of channels for a channel having a data signal modulated thereon in accordance with symbols from one of said symbol constellations established in accordance with said known standard.

18. (previously presented) The channel-search method of claim 17 wherein the symbol constellations established in accordance with the known standard comprise 64 QAM and 256 QAM, and wherein the symbol constellation other than the standard-compliant format is 16 QAM.

19. (original) The channel-search method of claim 18 wherein the symbol constellations established in accordance with the known standard comprise 64 QAM and 256 QAM, and wherein the symbol constellation other than the standard-compliant format is 4 QAM.

9. RELATED EVIDENCE APPENDIX

None.

10. RELATED PROCEEDINGS APPENDIX

None